

NEWSLETTER

March 2026/vol. 004

DATA SCIENCE EDUCATION IN STEAM FOR CIVIC ENGAGEMENT AND SOCIAL JUSTICE FROM THE EARLY YEARS

Project Number: 2023-1-CY01-KA220-SCH-000164724

Welcome to the fourth edition of the DataScEd4CiEn newsletter!

Empowering Educators: Professional Development in Action

The DataScEd4CiEn Professional Development programme brought together educators from across Europe in a series of three interactive sessions designed to support the integration of data science into STEAM education.

Through a combination of theoretical foundations, practical tools, and real classroom applications, participants developed the knowledge and confidence to implement data science for civic engagement and social justice in their teaching.

From conceptual frameworks to hands-on classroom strategies, the PD series fostered a growing transnational community of educators committed to meaningful, data-driven learning.

SESSION 1: Building Foundations in Data Science Education

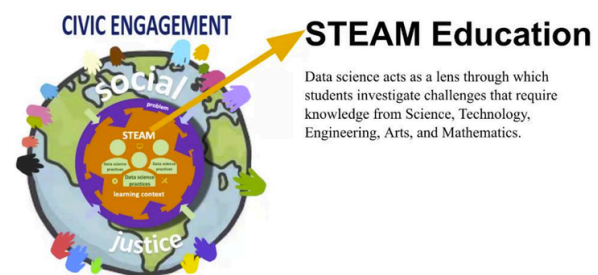
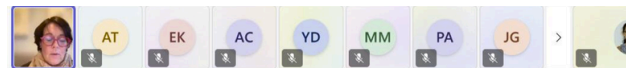
Date: 2nd February 2026

The first session introduced participants to the core principles of data science education within STEAM, setting the foundation for the programme.

Dr Aisling Leavy presented the DataScEd4CiEn conceptual framework, highlighting how data science can empower students to understand and respond to real-world challenges.

Dr Maria Meletioui led Module 2: Pedagogy for STEAM and Data Science for Civic Engagement, focusing on teaching approaches that connect data with socially relevant issues. She also introduced the Design Thinking methodology, supporting inquiry-based, student-centered learning.

Participants reflected on their own teaching contexts and began preparing ideas for classroom implementation.



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SESSION 2: Tools, Data, and Artificial Intelligence in the Classroom

9th February 2026

The second session focused on practical tools and applications, equipping participants with strategies to bring data science into the classroom.

Prof. Daniel Frischemeier introduced tools for data exploration, including CODAP, demonstrating how students can visualise and interpret data through graphs, distributions, and statistical measures.

Another digital tool for data exploration: CODAP

American Community Survey (ACS)

- This survey provides information about the citizens of the United States on a yearly basis.
- The survey includes variables including age, marital status, education, sex, income, worker type, employment status, SOCP, hours worked per week and weeks worked per year.
- More information can be found here: <https://www.census.gov/programs-surveys/acs/about/information-guide.html>

How does an AI model "learn"?

- We provide a model with a large number of examples (educational data).
- The model "searches" for patterns that link the input data to a decision or prediction.
- We evaluate its performance on new, unknown data.
- We optimize the model (and/or data) and repeat the process.
- Key point: what the model "learns" depends directly on the data we provide it with.

Participants also explored Artificial Intelligence and Machine Learning in education: Dr Georgia Solomonidou discussed opportunities and challenges of AI in education Dr Yianna Danidou introduced tools such as Teachable Machine for classroom use Dr Maria Meletiou connected AI and Machine Learning with data science literacy and STEAM education

Real-world applications of ML: AI in Social Media and Content Moderation

Case Study: Facebook's Content Moderation Algorithm

Social media platforms like Facebook use AI to detect and remove harmful content (e.g., hate speech, fake news, violent imagery). While these tools aim to ensure safety, they sometimes fail to detect nuanced contexts or mistakenly censor harmless content.

Discussion Prompt: How can social media companies improve AI fairness and reduce risks of censorship or bias?

Examples of STEAM Education Applications to Engage Students with Data Science and AI

- Simplified Case Studies:** Use reliable examples like recommendation systems (e.g., "What movies might you like?") or virtual assistants (e.g., "How does Alexa answer questions?").
- Interactive Activities:** Teach basic concepts like pattern recognition using games (e.g., sorting objects by color or size) to mirror how AI identifies patterns.
- Hands-on Experiments:** Use simple tools like coding apps (e.g., Scratch) to demonstrate how computers "learn" through instructions.
- Ethics Discussions:** Introduce topics like fairness (e.g., "Should a robot treat everyone the same way?") to develop critical thinking.
- STEAM Integration:** Combine AI topics with art and science projects, such as building models of AI tools or visualizing data trends with drawings.

The session emphasised that teaching data science goes beyond tools — focusing on interpretation, critical thinking, and real-world relevance.

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SESSION 3: From Theory to Practice – Classroom Implementation

Date: 5th March 2026

The final session focused on real classroom implementation, led by educators and researchers from partner schools.

Prof. Ana Serradó Bayés presented a range of STEAM scenarios addressing social justice issues such as migration, gender equality, sustainability, and climate action, all aligned with the Sustainable Development Goals.

Michalis Gavrielides guided participants through data practices in action, including problem formulation, data analysis, and communicating results within classroom scenarios.

Maria Lucia Vargas presented the project outcomes of the STEAM initiatives, showcasing results from classroom implementations and the educational impact across participating countries.

These real-world examples demonstrated how students can engage in authentic, interdisciplinary learning, developing both data literacy and civic awareness.



Looking ahead

The Professional Development program has laid a strong foundation for the continued integration of data science in STEAM education. By equipping educators with innovative tools, pedagogies, and real classroom examples, the project continues to support the development of critical thinkers, responsible citizens, and future-ready learners.